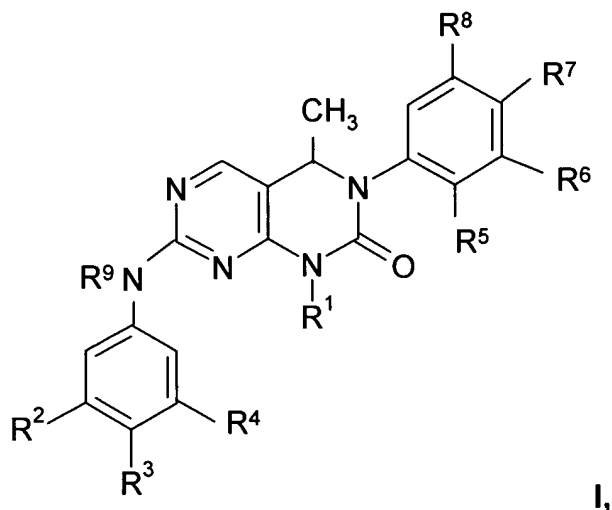


This listing of the claims will replace all prior versions and listings of the claims in this application.

In the Claims:

1. A compound of formula:



or a pharmaceutically acceptable salt thereof, wherein

R¹ is selected from the group

H,

C₁₋₁₀ alkyl,

C₁₋₁₀ alkyl substituted by up to three groups selected from aryl, cycloalkyl, heteroaryl, heterocycle, NR¹⁰R¹¹, OR¹², SR¹², halogen, COR¹³, CO₂R¹³, CONR¹³R¹⁴, SO₂NR¹³R¹⁴, SOR¹³, SO₂R¹³, CN and NO₂, wherein the aryl, cycloalkyl, heteroaryl, and heterocycle groups may each independently be substituted by up to three groups selected from NR¹⁰R¹¹, OR¹², SR¹², , halogen, COR¹³, CO₂R¹³, CONR¹³R¹⁴, SO₂NR¹³R¹⁴, SOR¹³, SO₂R¹³, CN and NO₂,

aryl,

aryl substituted by up to three groups selected from lower alkyl, $\text{NR}^{10}\text{R}^{11}$, OR^{12} , SR^{12} , , halogen, COR^{13} , CO_2R^{13} , $\text{CONR}^{13}\text{R}^{14}$, $\text{SO}_2\text{NR}^{13}\text{R}^{14}$, SOR^{13} , SO_2R^{13} , CN and NO_2 ,

heteroaryl,

heteroaryl substituted by up to three groups selected from lower alkyl, $\text{NR}^{10}\text{R}^{11}$, , OR^{12} , SR^{12} , halogen, COR^{13} , CO_2R^{13} , $\text{CONR}^{13}\text{R}^{14}$, $\text{SO}_2\text{NR}^{13}\text{R}^{14}$, SOR^{13} , SO_2R^{13} , CN and NO_2 ,

heterocycle,

heterocycle substituted by up to three groups selected from lower alkyl, $\text{NR}^{10}\text{R}^{11}$, OR^{12} , SR^{12} , halogen, COR^{13} , CO_2R^{13} , $\text{CONR}^{13}\text{R}^{14}$, $\text{SO}_2\text{NR}^{13}\text{R}^{14}$, SOR^{13} , SO_2R^{13} , CN and NO_2 ,

C_{3-10} cycloalkyl,

C_{3-10} cycloalkyl substituted by up to three groups selected from lower alkyl $\text{NR}^{10}\text{R}^{11}$, OR^{12} , SR^{12} , halogen, COR^{13} , CO_2R^{13} , $\text{CONR}^{13}\text{R}^{14}$, $\text{SO}_2\text{NR}^{13}\text{R}^{14}$, SOR^{13} , SO_2R^{13} , CN and NO_2 ,

C_{2-10} alkenyl,

C_{2-10} alkenyl substituted by up to three groups selected from $\text{NR}^{10}\text{R}^{11}$, OR^{12} , SR^{12} , halogen, COR^{13} , CO_2R^{13} , $\text{CONR}^{13}\text{R}^{14}$, $\text{SO}_2\text{NR}^{13}\text{R}^{14}$, SOR^{13} , SO_2R^{13} , CN and NO_2 , and

C_{2-10} alkynyl, substituted by up to three groups selected from $\text{NR}^{10}\text{R}^{11}$, OR^{12} , SR^{12} , halogen, COR^{13} , CO_2R^{13} , $\text{CONR}^{13}\text{R}^{14}$, $\text{SO}_2\text{NR}^{13}\text{R}^{14}$, SOR^{13} , SO_2R^{13} , CN and NO_2 ;

R^2 , R^3 and R^4 are independently selected from the group consisting of

H,

$\text{NR}^{10}\text{R}^{11}$,

OR^{12} ,

SR^{12} ,

C_{1-10} alkyl,

C₁₋₁₀ alkyl substituted by up to three groups selected from cycloalkyl, heteroaryl, heterocycle, NR¹⁰R¹¹, OR¹², SR¹², halogen, COR¹³, CO₂R¹³, CONR¹³R¹⁴, SO₂NR¹³R¹⁴, SOR¹³, SO₂R¹³, CN and NO₂; and wherein the cycloalkyl, heteroaryl, and heterocycle groups may each independently be substituted by up to three groups selected from lower alkyl, NR¹⁰R¹¹, OR¹², SR¹², halogen, COR¹³, CO₂R¹³, CONR¹³R¹⁴, SO₂NR¹³R¹⁴, SOR¹³, SO₂R¹³, CN and NO₂,

heteroaryl, heteroaryl substituted by up to three groups selected from lower alkyl, NR¹⁰R¹¹, OR¹², SR¹², halogen, COR¹³, CO₂R¹³, CONR¹³R¹⁴, SO₂NR¹³R¹⁴, SOR¹³, SO₂R¹³, CN and NO₂,

heterocycle, substituted by up to three groups selected from lower alkyl, NR¹⁰R¹¹, OR¹², SR¹², halogen, COR¹³, CO₂R¹³, CONR¹³R¹⁴, SO₂NR¹³R¹⁴, SOR¹³, SO₂R¹³, CN and NO₂,

C₃₋₁₀ cycloalkyl,

C₃₋₁₀ cycloalkyl substituted by up to three groups selected from lower alkyl, NR¹⁰R¹¹, OR¹², SR¹², halogen, COR¹³, CO₂R¹³, CONR¹³R¹⁴, SO₂NR¹³R¹⁴, SOR¹³, SO₂R¹³, CN and NO₂,

C₂₋₁₀ alkenyl,

C₂₋₁₀ alkenyl substituted by up to three groups selected from NR¹⁰R¹¹, OR¹², SR¹², halogen, COR¹³, CO₂R¹³, CONR¹³R¹⁴, SO₂NR¹³R¹⁴, SOR¹³, SO₂R¹³, CN and NO₂,

C₂₋₁₀ alkynyl, and

C₂₋₁₀ alkynyl substituted by up to three groups selected from NR¹⁰R¹¹, OR¹², SR¹², halogen, COR¹³, CO₂R¹³, CONR¹³R¹⁴, SO₂NR¹³R¹⁴, SOR¹³, SO₂R¹³, CN and NO₂,

Provided that at least one of R², R³ or R⁴ is not H.

R⁵, R⁶, R⁷ and R⁸ are independently selected from the group

H,

lower alkyl,

lower alkyl substituted by hydroxy or alkoxy,

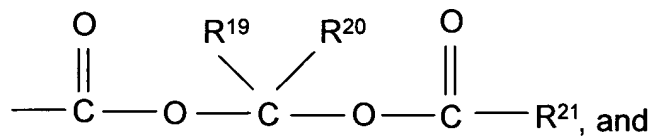
NR¹⁵R¹⁶,

OH,

OR¹⁷,
SR¹⁷,
halogen,
COR¹⁷,
CO₂R¹⁷,
CONR¹⁷R¹⁸,
SO₂NR¹⁷R¹⁸,
SOR¹⁷,
SO₂R¹⁷, and
CN;

R⁹ is selected from the group

H,



COR¹⁷;

R¹⁰ and R¹¹ are independently selected from the group

H,

COR¹³,

CO₂R¹³,

CONR¹³R¹⁴,

SO₂R¹³,

SO₂NR¹³R¹⁴,

lower alkyl,

lower alkyl substituted by hydroxy, alkoxy or NR¹⁵R¹⁶,

cycloalkyl,

cycloalkyl substituted by hydroxy, alkoxy, lower alkyl, or $\text{NR}^{15}\text{R}^{16}$,
heterocycle, and
heterocycle substituted by hydroxy, alkoxy, lower alkyl, or $\text{NR}^{15}\text{R}^{16}$,

or, alternatively, $\text{NR}^{10}\text{R}^{11}$ can form a ring having 3 to 7 atoms, said ring optionally including one or more additional hetero atoms and being optionally substituted by the group consisting of one or more lower alkyl, OR^{12} , COR^{13} , CO_2R^{13} , $\text{CONR}^{13}\text{R}^{14}$, SOR^{13} , SO_2R^{13} , and $\text{SO}_2\text{NR}^{13}\text{R}^{14}$,

R^{12} is selected from the group

H,
lower alkyl,
 COR^{13} ,
 $\text{CONR}^{13}\text{R}^{14}$,
 C_{2-6} alkyl substituted by hydroxy, alkoxy, or $\text{NR}^{15}\text{R}^{16}$, cycloalkyl,
cycloalkyl substituted by hydroxy, alkoxy, lower alkyl, or $\text{NR}^{15}\text{R}^{16}$,
heterocycle, and
heterocycle substituted by hydroxy, alkoxy, lower alkyl, or $\text{NR}^{15}\text{R}^{16}$,

R^{13} and R^{14} are independently selected from the group

H,
lower alkyl,
 C_{2-6} alkyl substituted by hydroxy, alkoxy, or $\text{NR}^{15}\text{R}^{16}$,
cycloalkyl,
cycloalkyl substituted by hydroxy, alkoxy, lower alkyl, or $\text{NR}^{15}\text{R}^{16}$,
heterocycle, and
heterocycle substituted by hydroxy, alkoxy, lower alkyl, or $\text{NR}^{15}\text{R}^{16}$,

or, alternatively, $\text{NR}^{13}\text{R}^{14}$ can form a ring having 3 to 7 atoms, said ring optionally including one or more additional hetero atoms and being optionally

substituted by the group consisting of one or more lower alkyl, OR^{17} , COR^{17} , CO_2R^{17} , $CONR^{17}R^{18}$, SO_2R^{17} , and $SO_2NR^{17}R^{18}$;

R^{15} is selected from the group

H,
lower alkyl,
 COR^{17} , and
 CO_2R^{17} ; and

R^{16} , R^{17} and R^{18} are independently selected from the group

H, and
lower alkyl,

or, alternatively, $NR^{15}R^{16}$ and $NR^{17}R^{18}$ can each independently form a ring having 3 to 7 atoms, said ring optionally including one or more additional hetero atoms;

R^{19} and R^{20} are independently selected from the group

H, and
lower alkyl; and

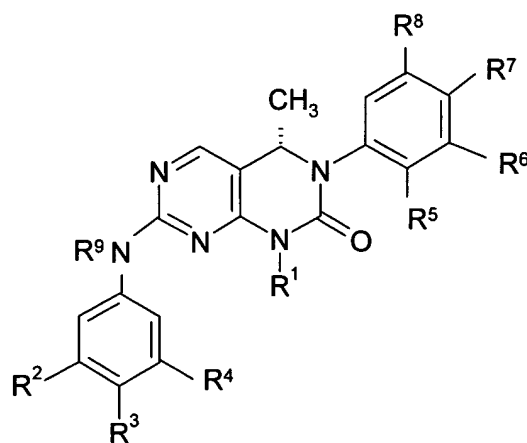
R^{21} is selected from

lower alkyl, and
 C_{2-6} alkyl substituted by hydroxy, alkoxy or $NR^{15}R^{16}$,

or a pharmaceutically acceptable salt thereof.

2. The compound of claim 1 wherein R^1 is selected from aryl and aryl substituted by CN and $CONR^{13}R^{14}$.

3. The compound of claim 1 wherein R^1 is selected from lower alkyl.
4. The compound of claim 2 wherein R^2 is C_{1-10} alkyl substituted by OR^{12} or $NR^{10}R^{11}$.
5. The compound of claim 3 wherein R^2 is OR^{12} .
6. The compound of claim 1 wherein R^3 is H.
7. The compound of claim 1 wherein R^3 and R^4 are H.
8. The compound of claim 1 wherein R^4 is C_{1-10} alkyl substituted by $NR^{10}R^{11}$.
9. The compound of claim 1 wherein R^5 is halogen.
10. The compound of claim 1 having the formula



Ia.

11. A compound selected from the group:

(±)-3-[7-[3-(2-Hydroxy-ethyl)-phenylamino]-3-(4-methoxy-phenyl)-4-methyl-2-oxo-3,4-dihydro-2H-pyrimido[4,5-d]pyrimidin-1-yl]-benzonitrile ;

(±)-3-[7-[3-(2-Diethylamino-ethyl)-phenylamino]-3-(4-methoxy-phenyl)-4-methyl-2-oxo-3,4-dihydro-2H-pyrimido[4,5-d]pyrimidin-1-yl]-benzonitrile ; and

(±)-3-[7-[3-(2-Dimethylamino-ethyl)-phenylamino]-3-(4-methoxy-phenyl)-4-methyl-2-oxo-3,4-dihydro-2H-pyrimido[4,5-d]pyrimidin-1-yl]-benzonitrile .

12. A compound selected from the group:

(±)-3-(3-(4-Methoxy-phenyl)-4-methyl-7-{3-[2-(4-methyl-piperazin-1-yl)-ethyl]-phenylamino}-2-oxo-3,4-dihydro-2H-pyrimido[4,5-d]pyrimidin-1-yl)-benzonitrile ;

(±)-3-[7-[3-(2-Diethylamino-ethyl)-phenylamino]-3-(4-methoxy-phenyl)-4-methyl-2-oxo-3,4-dihydro-2H-pyrimido[4,5-d]pyrimidin-1-yl]-benzamide ;

(±)-3-[7-[3-(2-Dimethylamino-ethyl)-phenylamino]-3-(4-methoxy-phenyl)-4-methyl-2-oxo-3,4-dihydro-2H-pyrimido[4,5-d]pyrimidin-1-yl]-benzamide ; and

(±)-3-(3-(4-Methoxy-phenyl)-4-methyl-7-{3-[2-(4-methyl-piperazin-1-yl)-ethyl]-phenylamino}-2-oxo-3,4-dihydro-2H-pyrimido[4,5-d]pyrimidin-1-yl)-benzamide .

13. The compound

(+)-3-(2-Bromo-phenyl)-7-[4-(2-diethylamino-ethoxy)-phenylamino]-1,4-dimethyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one.

14. The compound

(-)-3-(2-Bromo-phenyl)-7-[4-(2-diethylamino-ethoxy)-phenylamino]-1,4-dimethyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one.

15. The compound

(±)-3-(2-Bromo-phenyl)-7-[4-(2-diethylamino-ethoxy)-phenylamino]-1,4-dimethyl-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one.

16. (Currently Amended) A ~~pharmaceutical~~ composition comprising a therapeutically effective amount of a compound of claim 1 and pharmaceutically acceptable carrier or excipient.

17. (Currently amended) A method for treating breast or colon cancer comprising the administration of ~~administering to a patient in need of such treatment~~ a therapeutically effective amount of a compound of claim 1.

Claims 18 - 20. (Canceled)

21. A compound selected from the group:

(±)-Acetic acid 2-{3-[8-(3-cyano-phenyl)-6-(4-methoxy-phenyl)-5-methyl-7-oxo-5,6,7,8-tetrahydro-pyrimido[4,5-d]pyrimidin-2-ylamino]-phenyl}-ethyl ester and

(±)-Methanesulfonic acid (2-{3-[8-(3-cyano-phenyl)-6-(4-methoxy-phenyl)-5-methyl-7-oxo-5,6,7,8-tetrahydro-pyrimido[4,5-d]pyrimidin-2-ylamino]-phenyl}-ethyl)-ester,